REMARKS

Claims 3-5, 7-11, 16-25, 28-29, 31-33, 35, and 39 are pending. Claims 26-27, 30, 37-38, and 40 are canceled herein. Claims 7-11, 18, 21 and 22 have been allowed, and Applicants gratefully acknowledge the Examiner's allowance of these claims. A minor amendment in the specification has been made pursuant to the Examiner's request. No new matter has been introduced.

Amendment to the Specification

Applicants withdraw the amendment of the specification made in their May 12, 2008 Response as the amendment inadvertently included incorrect information.

This application claims the benefit of priority from U.S. Provisional Patent Applications Serial Nos. 60/018,793 and 60/018,746, the full disclosures of which have been incorporated in this application by reference. Both of the provisional applications clearly show that the entry of the fifth column of Table II is G-peak $\Delta \pm 5$ cm^{-1}. *See* p. 25 of each of the U.S. Provisional Patent Applications Serial Nos. 60/018,793 and 60/018,746. Accordingly, Applicants amend Table II to be consistent with the disclosures of the provisional applications.

Responses to Rejections under 35 U.S.C. 112

Claims 26-27, 30, 37-38, and 40 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. These claims were further rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

In order to expedite allowance of this application, these claims are canceled. Accordingly, the 112 rejections of these claims are moot. Applicants reserve their right to bring these claims in any continuation or continuation-in-part applications that may be filed.

Response to Rejections under 35 U.S.C. 103(a) in view of Baldwin

Claims 3-5, 16-17, 20, 23-25, and 28-29 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,616,179 (hereinafter, "Baldwin"). Applicants respectfully traverse and reiterate their previous position.

The Examiner's obviousness rejection should be withdrawn as prima facie grounds for the rejection have not been established. As previously stated, Baldwin teaches away from the features of the claimed substantially uniform impact energy distribution and substantially uniform weight distribution. The Examiner has failed to show that the claimed substantially uniform impact energy distribution and substantially uniform weight distribution are necessarily present in Baldwin, as Baldwin teaches away from these features. Baldwin, in col. 5 ll. 55-56 and col. 6 ll. 3-8, states:

> [T]he present process using the end-Hall ion source is superior to conventional methods in a number of respects:
> ...
> **ion energy distribution contains both low energy ions and a high energy component of the beam which gives proper amount of high energy ion bombardment**—this would normally remove the need for a second ion source for argon or other ion bombardment for ion-assisted deposition;...

(emphasis added). The above statements of Baldwin expressly teach that one of distinguishable features of Baldwin from conventional methods is that **ion energy distribution** of Baldwin contains **both low energy *ions* and high energy component.** Contrary to the clear language and teachings of Baldwin, the Examiner has asserted that the term "low energy ions" therein

should be interpreted to mean low energy neutral species as she "found no other recitations with respect to the presence of any low[er] energy ions, but found more detailed description with respect low energy **reactive neutral species**". However, as the Examiner acknowledged, the terms, ions and neutral species, have entirely different meanings and cannot be used interchangeably. Also, it does not appear that the term "low energy ions" was used mistakenly as no record showing any attempt to correct the term (e.g., Certificate of Correction) is found in Baldwin. Further, Applicants have found no recitations in Baldwin with respect to substantially uniform impact energy distribution and substantially uniform weight distribution.

Moreover, in distinguishing the invention of Baldwin from the prior art, Baldwin discussed the importance of and difference in ion energy distribution. Baldwin, in col. 3 ll. 10-30, states:

> The present invention requires the use of an end-Hall effect ion source to perform the subject process. No secondary ion source or gas mixtures are necessary to produce a-C:H in the present invention, though they may be used, if desired. The end-Hall source used in the present invention is functionally different than the Okada et al closed-drift source for several important reasons.
>
> Firstly, the magnetic field and electric field design principles are different for the two types of source. Generically, the closed-drift source maintains a nearly perpendicular orientation between the magnetic field vector B and the applied electric field vector E, while the end-Hall design places these two vectors parallel except for the controlled divergence of the magnetic field near the exit aperture. **This difference is partially responsible for the different ion energy distribution produced by each source** as can be seen by comparing the published ion energy distributions in the respective papers cited above. Secondly, **there is a difference in ion energy distributions between the Okada et al closed-drift source and the end-Hall used in the present invention**...

(emphases added). The above statements are consistent with the previously-discussed statement of Baldwin, "ion energy distribution contains both low energy ions and a high energy component of the beam which gives proper amount of high energy ion bombardment—this would normally

remove the need for a second ion source for argon or other ion bombardment for ion-assisted deposition". As the above statements suggest, substantially uniform impact energy distribution and substantially uniform weight distribution should not be assumed to be present, especially where the disclosures expressly teach that ion energy distribution contains both low energy ions and a high energy component.

More importantly, it is well known in the art that an end hall "Kaufmann Type" DC ion source, which was used in Baldwin, does not provide a stream having a substantially uniform impact energy distribution. *See* the Declaration of Dr. Manfred Weiler Under 37 C.F.R. 1.132 submitted herewith, ¶ 4. A typical feature of such source is that the ion energy distribution is broad because the potential of origin of the accelerated ions is not precisely defined. *See id.* Baldwin therefore does not teach a method to form a stream having a substantially uniform impact energy distribution. *See id.*

For the above reasons, the Examiner is respectfully requested to withdraw the rejection.

Response to Rejection under 35 U.S.C. 103(a) over Baldwin in view of Rabalais

Claims 19, 31-35, and 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Baldwin and further in view of U.S. Patent No. 5,374,318 ("Rabalais"). Applicants respectfully traverse.

Claim 19 depends on claim 3, which is allowable for reasons discussed above, and is allowable as depending on an allowable claim and reciting additional novel combinations of claim elements.

Claim 31 is also allowable for reasons discussed above with respect to claim 3. Claims 32-33, 35, and 39 depend on claim 31 and are allowable as depending on an allowable claim and reciting additional novel combinations of claim elements. Claim 34 was canceled previously.

CONCLUSION

In view of the foregoing, Applicants believe all claims pending, claims 3-5, 7-11, 16-25, 28-29, 31-33, 35, and 39, are in condition for allowance, and such action is respectfully requested.

If the Examiner believes that a telephone or other conference would be of value in expediting the prosecution of the present application, enabling an Examiner's amendment or other meaningful discussion of the case, Applicants invite the Examiner to contact Applicants' representative at (310) 777-8399.

Respectfully Submitted,

TROJAN LAW OFFICES
By

Dated: December 9, 2008

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